REVEO-0050

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Applicants: Li et al. Examiner: Chowdhury, T.

Serial Number: 09/ Group Art Unit 2871

Filing Date: December 12, 2001 Attorney Docket No.: REV50USAAC02

Title: Super Broad-band Polarizing Reflective Materials and Methods for Making the Same

Honorable Director of Patents
And Trademarks

PRELIMINARY AMENDMENT

Sir:

This is a Preliminary Amendment to a Continuation Application of Serial Number 09/066,403 filed on April 30, 1998.

Please cancel claims 97-121.

Please add new claim 122 through 143 as follows:

122. A broad-band polarizer comprising:

a film in cholesteric order of only one liquid crystal material and sites of non-linearly varying pitch across the thickness of said film and at least one chiral material.

123. The broad-band polarizer according to claim 122 wherein said only one liquid crystal material is a polymer.

124. The broad-band polarizer according to claim 122 wherein said only one liquid crystal material is a monomer.

125. The broad-band polarizer according to claim 122 wherein said only one liquid crystal material is an oligomer.

126. The broad-band polarizer according to claim 122 wherein said only one liquid crystal material is a non-cross-linkable liquid crystal

127. The broad-band polarizer according to claim 122 wherein said only one liquid crystal material is a nematic.

128. The broad-band polarizer according to claim 122 wherein said only one liquid crystal material has at least one permanently attached chiral group.

129. The broad-band polarizer according to claim 122 wherein said at least one chiral material is non-cross-linkable.

130. The broad-band polarizer according to claim 122 wherein said at least one chiral material is polymerizable.

131. The broad-band polarizer according to claim 122 wherein said at least one chiral material does not have a mesogenic group.

132. The broad-band polarizer according to claim122 wherein said at least one chiral material does have a mesogenic group.

133. A method of fabricating a broad-band polarizer comprising the step of:

forming a film from only one liquid crystal material and at least one chiral material such that said only one liquid crystal material is distributed non-linearly across the thickness of said film in a plurality of similarly non-linearly distributed sites having pitches greater than said at least given pitch in said only one liquid crystal material.

134. The method according to claim 133 wherein said only one liquid crystal material is a polymer.

135. The method according to claim 133 wherein said only one liquid crystal material is a monomer.

136. The method according to claim 133 wherein said only one liquid crystal material is an oligomer

137. The method according to claim 133 wherein said only one liquid crystal material is a non-cross-linkable liquid crystal.

138. The method according to claim 133 wherein said only one liquid crystal material is a nematic.

139. The method according to claim 133 wherein said only one liquid material has at least one permanently attached chiral group.

140. The method according to claim 133 wherein said at least one chiral material is non-cross-linkable.

141. The method according to claim 133 wherein said at least one chiral material is polymerizable.

142. The method according to claim 133 wherein said at least one chiral material does not have a mesogenic group.

143. The method according to claim 133 wherein said at least one chiral material does have a mesogenic group.

REMARKS

This is Preliminary Amendment is in response to an Office Action mailed on September 12, 2001 with a three-response date of December 12, 2001.

In the Office Action dated September 12, 2001, the Examiner rejeceted claims 97-121 under 35 USC 101 claiming the same invention as that of claims 1-25 of prior US Patent No. 6,181,395 B1. The Applicants have cancellked claims 97-121 and respectfully submit new claims 122 through 143.

The Applicants believe that no extension fees are due in the 09/066,403 case, but if the Examiner determines that extension fees are due, please charge them to Deposit Account 501648.

The Applicants are attaching a set of claims now in the case as required under 37 CFR 1.121.

The Applicant wants to thank the Examiner for his review of the application and respectfully request an early allowance of the claims presently in the application.

December 12, 2001

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WE CLAIM:

122. A broad-band polarizer comprising:

a film in cholesteric order of only one liquid crystal material and sites of non-linearly varying pitch across the thickness of said film and at least one chiral material.

123. The broad-band polarizer according to claim 122 wherein said only one liquid crystal material is a polymer.

124. The broad-band polarizer according to claim 122 wherein said only one liquid crystal material is a monomer.

125. The broad-band polarizer according to claim 122 wherein said only one liquid crystal material is an oligomer.

126. The broad-band polarizer according to claim 122 wherein said only one liquid crystal material is a non-cross-linkable liquid crystal

127. The broad-band polarizer according to claim 122 wherein said only one liquid crystal material is a nematic.

128. The broad-band polarizer according to claim 122 wherein said only one liquid crystal material has at least one permanently attached chiral group.

129. The broad-band polarizer according to claim 122 wherein said at least one chiral material is non-cross-linkable.

130. The broad-band polarizer according to claim 122 wherein said at least one chiral material is polymerizable.

131. The broad-band polarizer according to claim 122 wherein said at least one chiral material does not have a mesogenic group.

132. The broad-band polarizer according to claim122 wherein said at least one chiral material does have a mesogenic group.

133. A method of fabricating a broad-band polarizer comprising the step of:

forming a film from only one liquid crystal material and at least one chiral material such that said only one liquid crystal material is distributed non-linearly across the thickness of said film in a plurality of similarly non-linearly distributed sites having pitches greater than said at least given pitch in said only one liquid crystal material.

134. The method according to claim 133 wherein said only one liquid crystal material is a polymer.

135. The method according to claim 133 wherein said only one liquid crystal material is a monomer.

136. The method according to claim 133 wherein said only one liquid crystal material is an oligomer

137. The method according to claim 133 wherein said only one liquid crystal material is a non-cross-linkable liquid crystal.

138. The method according to claim 133 wherein said only one liquid crystal material is a nematic.

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142. The method according to claim 133 wherein said at least one chiral material does not have a mesogenic group.

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